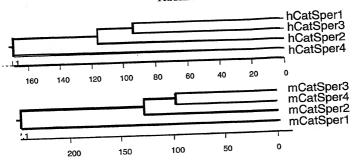
FIGURE 1

THE REPORT OF THE PROPERTY OF	0050
MSQHFHHNPV RVKSGSLFAT ASEALQARLS KIKRKDKECQ AYFRKVI <u>KST</u>	0100
	0150
KVYVDPITYW KDGYNILDVI ILIIL IIP IE EKKIROTAIN FAII GECLEG	0200
KYYYDPITYW KDGYNILDYI ELILITIP ERMIYASY LILEFLLMFV FAILGFCLFG LIRILKLISYS RGIRTLIAV GETVYTVASV LILEFLLMFV FAILGFCLFG VTDRGDLENW GNLASAFFIL FSLATVDGWT DLOBELDRRK FTVSRAFFIL VTDRGDLENW GNLASAFFIL FSLATVDGWT DL TIERNI AI MEEKOILLKR	0250
VTDRGDLENW GNLASAFFTL FSLATVDGW1 DEG FILLASFIFL NMFVGVMIMH TEDSMKKFER DLTLERNLAI MEEKQIILKR FILLASFIFL NMFVGVMIMH TEDSMKKFER DLTLERNLAI MEEKQIILKR	0300
FILLASFIFL NMFVGVMIMH TEDSMIKKFOR DETECTION OF STSLSFIDI QOEEVNRLMN TQKTGSMNFI DMVEGFKKTL RHTDPMVLDD FSTSLSFIDI QOEEVNRLMN TQKTGSMNFI DMVEGFKKTL RHTDPMVLSSSS LSGLS	0350
QQEEVNRLMN TQKTGSMNFI DM VEGFAKTE KITTET KATTET KAT	0395
VI VII DNODV IVSKLQELYC EIVN VLSLINE EDIN RESSET	

FIGURE 2

THE COORDER VERNINDECR AFVERVIMSR	0050
MSQHRHQRHS RVISSSPVDT TSVGFCPTFK KFKRNDDECR AFVKR <u>VIMSR</u>	0100
MSQHRHQRHS RVISSSPVDT TSVGFCFTFK AT INCUSED SM FFKIIMISTY TSNAFFMALW TSYDIRYRLF RLLEFSEIFF VSICTSELSM FFKIIMISTY TSNAFFMALW TSYDIRYRLF RLY A LBOI MGKOFT YLYIADGMQS	0150
KVYVDPINYW KNGYNLLDVI III VMFLF TA LAOJAJOAN	0200
KVYVDPINYW KNGYNLLDYI IIIVMITETA LEILMYI FAILGFCLFG LRILKLIGYS OGIRTLITAV GOTVYTVASV LLLI FILLMYI FAILGFCLFG SPDNGDHDNW GNLAAAFFTL FSLATVDGWT DLOKOLDNRE FALSRAFTII SPDNGDHDNW GNLAAAFFTL FSLATVDGWT DLOKOLDNRE FALSRAFTII SPDNGDHDNW GNLAAAFFTL FSLATVDGWT DLOKOLDNRE FALSRAFTII SPDNGDHDNW GNLAAAFFTL FSLATVDGWT DLW HOORD M. MGEKOVILOR	0250
SPDNGDHDNW GNLAAAFFTL FSLATVDGWT DEORGIA MGEKOVILOR	0300
SPDNGDHDNW GNLAAAFFIL FSLATVDWY I DE SEKQVILQR FILLASFIFL NMFVGVMIMH TEDSIRKFER ELMLEQQEML MGEKQVILQR FILLASFIFL NMFVGVMIMH TEDSIRKFER ELMLEQQEML DE FGTSLPFID	0350
FILLASFIFL NMFVGVMIMH TEDSIRKFER ELVILLOUND DEGTSLPFID QQEEISRLMH IQKNADCTSF SELVENFKKT LSHTDPMVLD DEGTSLPFID	0398
QQEEISRLMH IQKNADCTSF SELVENFART LIGHTLEY IYFSTLDYQD TTVHKLQELY YEIVHVLSLM LEDLPQEKPQ SLEKVDEK	





hCatSper3 and hCatSper1 are 21% identical hCatSper3 and hCatSper2 are 22% identical hCatSper4 and hCatSper1 are 17% identical hCatSper4 and hCatSper2 are 21% identical

mCatSper3 and mCatSper1 are 20% identical mCatSper3 and mCatSper2 are 22% identical mCatSper4 and mCarSper1 are 22% identical mCatSper4 and mCarSper2 are 22% identical mCatSper4 and mCatSper2 are 22% identical

hCatSper1 and mCatSper1 are 48% identical hCatSper2 and mCatSper2 are 71% identical hCatSper3 and mCatSper3 are 68% identical hCatSper4 and mCatSper4 are 65% identical

WO 2004/015066

SEQ ID NO: 1 (Human CatSper4 cDNA)	0050
SEQ ID NO: 1 (Human CatSper4 cDNA) ATGTCTCAAC ACCGTCACCA GCGCCACTCG AGAGTCATTT CTAGTTCACC	0100
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AGTTGACACT ACATCGTGG GAITTIGCCC ARCAT AATGAGCCGT GGAACGATGA TGAATGTCGG GCATTTGTGA AGAGAGTCAT AATGAGCCGT GGAACGATGA TGAATGTCGA CTGTC ACATCGAATG CGTTTTTTAT	0200
GGAACGATGA TGAATGTCGG GCATTIGTGA ACACCGAATG CGTTTTTTAT TTCTTTAAGA TAATTATGAT TAGCACCTGTC ACATCGAATG CGTTTTTTAT TTCTTTAAGA TAATTATGAT CACATAAGGTA CCGCTTGTTC AGACTTCTTG	0250
TICTITAAGA TAATTATGAT TAGGACIGIC ACATCOMATO GGCCTTGTGG ACCAGTTATG ACATAAGGTA CCGCTTGTTC AGACTTCTTG GGCCTTGTGG ACCAGTTATG TAGTCCATCT GCACATCTGA GTTGTCCATG	0300
GGCCTTGTGG ACCAGTTATG ACATAAGGTA CCGCTTGA GTTGTCCATG AGTTCTCGGA GATCTTCTTT GTGTCCATCT GCACATCTGA GTTGTCCATG AGTTCTCGGA GATCTACTGG AAGAACGGCT ACAACCTGCT	0350
AGTICTCGGA GATCTTCTTT GTGTCCATCT GCACATCTGA ACGGCT ACAACCTGCT AAGGTCTATG TGGACCCCAT CAACTACTGG AAGAACGGCT ACAACCTGCT AAGGTCTATG TGGACCCATCTTTTTT ACCCTATGCC CTCCGCCAGC	0400
AAGGTCTATG TGGACCCCAT CAACTACTGA AAGTACTGCC CTCCGCCAGC GGATGTGATC ATTATCATCG TTATGTTTTT ACCTGTATGC CTCCGCCAGC GGATGTGATC ATTATCATCGTTATA TCGCTGATGG CATGCAGTCC	
GGATGTGATC ATTATCATCG TTATGTTTTT ACCUTGATGG CATGCAGTCC TCATGGGCAA ACAGTTCACT TACCTGTATATA TCGCTGATGG CATGCAGTCC TCATGGCCAGTGCATTAGC CAGGGCATCC GGACGCTGAT	0450
TCATGGGCAA ACAGTTCACT TACCTGTATA TCGCTATC GGACGCTGAT CTGCGCATCC TCAAGCTTAT CGGCTATAGC CAGGGCATCC GGACGCTGTC CTCTACACCGT GGCCTCTGTG CTCCTCCTGC	0500
CTGCGCATCC TCAAGCTTAT CGGCTATAGC CAGGCTCTGTG CTCCTCCTGC CACCGCCGTG GGCCAGACAG TCTACACCGT GGCCTCTGTG CTCCTCTGC CACCGCCGTG GGCCAGACAG TCTACACTTTTGGCTTCTTTTGGA	0550
CACCGCCGTG GGGCAGACAG TCTACACCGT GGCCTTCTG CCTGTTTGGA TCTTCCTCCT CATGTACATC TTCGCTATCT TGGGCTTCTG CTGTTTGGA TCTTCCTCCT CATGTACATC TTCACTA TGATACTGG GGGAACCTGG CTGCAGCTTT	0600
TCTTCCTCCT CATGTACATC TTCGCTATCT TGGCTGG CTGCAGCTTT TCTCCAGACA ATGGTGACCA TGATAACTGG GGGAACCTGG CTGCAGCTTT TCTCCAGACA ATGGTGACCA CGCTTGA TGGCTGGACA GACCTGCAGA	0650 .
TCTCCAGACA ATGGTGACCA TGATAACIGG GGGACA GACCTGCAGA TTTCACCCTC TTCAGCTTGG CCACGGTTGA TGGCTGGACA GACCTGCAGA TTTCACCCTC TTCAGCTTGCAA TTTCCTTTGA GCCGGGCATT CACCATCATC	0700
TTTCACCCTC TTCAGCTTGG CCACCGT TGA TGGCTGGGCATT CACCATCATC AGCAGTTGGA CAATCGGGAA TTTGCTTTGA GCCGGGCATT CACCATCATC AGCAGTTGGA CAATCGTGATCTTCCTC AACATGTTCG TGGGTGTGAT	0750
AGCAGTTGGA CAATCGGGAA TITTEGGTGA ACATGTTCG TGGGTGTGAT	0800
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GATCATGCAC ACAGAGGACT CONTOURS A GOTCAT TCTGCAGCG	G 0900
TGGAGCAGCA GGAGATGCTC ATGCAGCATACAGAAAA ATGCTGACT	G 0950
CAGCAGGAGG AGATCAGCAG GCTGATA CAAGACC TTGAGCCACA	1000
CACAAGTTTC AGTGAGCIGG TGGAGTTACC CTTCATCGAT	1050
CTGACCCAAT GGTCTTGGAT GATTAGAGA CAAGCTTCA	1100
ATCTACTTTT CCACICIGGA CIACATTCCT GAGCCTA ATG CTGGAAGAC	Г 1150
ATCTACTTTT CCACTCTGGA CTACCAGGAC ACARCTACTTT CACACTGGAAGACTAGACTGTAC TATGAGATCG TGCCATGTGCT GAGCCTAATG CTGGAAGACTGTGCCCCAGGA GAAGCCCCAG TCCTTGGAAA AGGTGGATGA GAAGTAG	1197
TGCCCCAGGA GAAGCCCCAG TCCTTGGAAA AGG TGCTTGGAAA	
SEQ ID NO: 2 (Human CatSper4 Protein Sequence) MSQHRHQRHS RVISSSPVDIT TSVGJEFCTFK KFKRNDDECR AFVKRVIMSR MSQHRHQRHS RVISSSPVDIT TSVDIPVBI F RILLEFSEIFF VSICTSELSM	0050
MSOHRHORHS RVISSSPVD1 13VGICT TO A PROPERTY VSICTSELSM	0100
FFKIIMISTV TSNAFFMALW 131DIN TO DVA I BOLMCKOFT YLYIADGMQS	0150
KVYVDPINYW KNGYNLLDVI III VIII WYLFAILGFCLFG	0200
LRILKLIGYS QGIRTLITAY GQTVI AMERICAN DI OKOL DNRE FALSRAFTII	0250
SPONGDHONW GNLAAAFTE ISLATIFED IN AT HOOFMI, MGEKOVILQR	0300
FILLASFIFL NMFVGVMIWH IBDSINGT I SUTDPMVI D DFGTSLPFID	0350
FILLASFIFL NMFVGVMIMH TEDSIRKFER ELMILOVID DFGTSLPFID QQEEISRLMH IQKNADCTSF SELVENFKKT LSHTDPMVLD DFGTSLPFID QQEEISRLMH IQKNADCTSF SELVENFKVI SIM LEDLPOEKPQ SLEKVDEK	0398
QQEEISRLMH IQKNADCTSF SELVENFART LSHTDL KEVDEK IYFSTLDYQD TTVHKLQELY YEIVHVLSLM LEDLPQEKPQ SLEKVDEK	
SEQ ID NO: 3 (Murine CatSper 4 cDNA) ATGICCCAAC ATTITICACA CAACCCTGTA CGAGTCAAGT CGGGCTCAC	T 0050
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TTCTTCCAGA TTGTGATGAT CACCACGGIC ACCAGTTTTTC AGAACCTTT GGTCTTGGGG ACTAATTATG ACATACCATT CGAGTTTTTC AGAACCTTT	3 0300
GGTCTTGGGG ACTAATTATG ACATACAATI COAGGCGA GTTCCTCATC AGGTCTCAGA GCTTTTCTTT GTATCTGTCT ATGTCTGCGA GTTCCTCATC AGGTCTCAGA GCCCATTACATACTGG AAGGATGGCT ATAACATA	CT 0350
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AAGGTCTATG TGGACCCCAT TACATACTG AAGGATCTC CTCCGCAAA GGATGTGATC ATTCTCATCA TTCTCACCAT ACCCTATCTC CTCCGCAAA	T 0450
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CATCGCTGTG GGGGAGACGG TCTACACTGT GGCTATTTGGC TCTTCCTCCT CATGTTTTGTG TTCGCGATCC TGGGATTCTG CCTATTTTGGC TCTTCCTCCT CATGTTTGTG TGGGAGACTGG GGGAACCTGG CTTCAGC	TTT 0650
TCTTCCTCCT CATGITTGTG TTCGCGATCC TGGGATCTGCTCAGC GTGACGGACA GAGGCGACCT GAGAACTGG GGGACCTGACCT	iG 0700
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CTITACTCT TTCAGTTTGG CCACGGTTGA IGGCTGGACGTT TACTATCG AAGAGCTGGA CAAGAGGAAG TTTACTGTGA GCCGGGGGTT TACTATCG AAGAGCTGGA CAAGAGGAAG TATACTCCCTC AACATGTTTG TGGGTGTGA	т 0800
AAGAGCTGGA CAAGAGGAAG TTTACTGTGA GCCGGCGCGCTGCA TTCATCTTGC TTGCATCCTT CATCTTCCTC AACATGTTTG TGGGTGTGA TTCATCTGCATCGATGAAAAA GTTTGAGCGG GATCTGA	CGT 085
TICATCTIGC TIGCATCCTT CATCTICCTC AACATOT TO TICATCTIGC TIGCATCCTT CATCAAAA GTTTIGAGCGG GATCTGA GATCATGCAC ACGAGGAGTA TICATGGAGGAGA AGCAAATAAT CCTGAAA	CGC 090
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TGGAGAGGAA CCTTGCGATT ATGGAGGAGA AGCAAATAAT CTGGTA CAGCAAGAGG AGGTCAACAG GCTGATGAAC ACACAGAAAA CTGGTA CAGCAAGAGG AGGTCAACAG GCTGATGAAC ACACAGAAAA CTGGTA	CAG 100
CAGCAAGAG AGGTCAACAG GCTGATGAAC ACACAGATACACACAGAGACCACAGAGACCATG CGGCACAGACTTCATT GATATGGTTGG AGGGCTTCAA GAAGACCCTG CGGCACAGACTA GTCTCCCTT CATTGATA'	TC 105
GAACTTCATT GATATGGTGG AGGGCTTCAA GAAGACCTTCATTGATA' ACCCCATGGT TCTGGATGAC TTCAGCACTA GTCTCTCCTT CATTGATA' ACCCCATGGT TCTGGATGAC TCAGCATGTT ATTGTCAGCA AGCTTCAG	3GA 110
ACCCCATGGT TCTGGATGAC TTCAGCACTA GTCTCTCCTT CATCTCAC	JUA IIU

A CCTCCTGAG CCTGATGTTG GAAGACATGC	1130	
GCTCTACTGT GAGATTGTGA ACGTGCTGAG CCTGATGTTG GAAGACATGC	1188	
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SEQ ID NO: 4 (Murine CatSper4 Protein Sequence) MSQHFHHNPV RVKSGSLFAT ASEALQARLS KIKRKDKECQ AYFRKVIKST MSQHFHHNPV RVKSGSLFAT CATSIVDIOEFFF RTFEVSELFF VSVYVCEFLM		
MSOHFHHNPV RVKSGSLFAT ASLETS PRINCIPLE ER VSVYVCEFLM	0100	
MSQHFHHNPV RVKSGSLPAT ASHAUJARIS KINKULDI FFQIVMITTV TINSFLLVIG TINYDQFEIF RIFEVSELFF VSVYVCEFLM KYYVDPITYW KDGYNILDVI LIILTIPYL LRKIKGNHSA YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL LRKIKGNHSA YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL RKIKGNHSA YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL LKIKGNHSA YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL LKIKGNHSA YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL LKIKGNHSA YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL LKIKGNHSA YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL KONTON YLHFADGIQS KYYVDPITYW KDGYNILDVI LIILTIPYL KONTON YLHFADGIQS KYYDPITYW KDGYNILDVI KNOTON YLHFADGI KYYDPITYW KDGYNILDVI KNOTON YLHFADGI KYYDPITYW KDGYNILDVI KNOTON YLHFADGI KYYDPITYW K	0150	
ELEVEDRITYW KDGYNILDVI ILIILTIPYL LRKIKGNISA TLAIT CECLEG	0200	
KYYVDPITYW KDGYNILDVI ILIILIPYL LKAIKONIA KYYVDPITYW KDGYNILDVI ILIILIPYY LILLFLLMFV FAILGFCLFG LRILKLISYS RGIRTLIIAV GETVYTVASV LTLLFLLMFV FAILGFCLFG LRILKLISYS RGIRTLIIAV GETVYTDGWT DLOEELDKRK FTVSRAFTIL	0250	
LRILKLISYS RGIRTLIIAV GETVYTVASV LILLFLLING VARIAGE VA	0300	
VTDRGDLENW GNLASAFFTL FSLATVDGW I DLDGLENG HER OLTLERNLAI MEEKQIILKR FILLASFIFL NMFVGVMIMH TEDSMKKFER DLTLERNLAI MEEKQIILKR FILLASFIFL NMFVGVMIMH DMVFGFKKTL RITTDPMVLDD FSTSLSFIDI		
FILLASFIFL NMFVGVMIMH TESSITION TO PHYTOPMVI DD FSTSLSFIDI	0350	
QQEEVNRLMN TQKTGSMNFI DMVEGFKKTE ANTENDE YLVTLDNQDV IVSKLQELYC EIVNVLSLML EDMPKESSSS LSGLS	0395	
MANUAL DINODY IVSKLOELYC EIVNVLSLML EDMPKESSSS LSGLO		
ILVIEDIQD (1.15122 ()		
4 51 Souling sequence containing basal promoter region)	0050	
SEQ ID NO: 5 (hCatSper4 5' flanking sequence containing basal promoter region) ACAGGCATGA GCCACCGCGCTTGGCCAGAA GTGGCATTCT TAAATTCAAG ACAGGCATGA GCCACCGCTATG CACACATTTT ATAACCCAGA AATTCAAGCA	0030	
ACAGGCATGA GCCACCGCGC I I GGGGCAGA AATTCAAGCA	0100	
A A ATTGGGAT GGGGAGTATT CHECKER A CALATACTTC TA AGGTGGAA	0120	
ATTCTGGTGA CTACAAATGC ATTGTTTTGG AGAATAGTTG AATAACAATT AAAGAATTAG GAACTCGACA GATAGTGAGT TTTAACTTTA AATAACAATT AAAGAATTAG GAACTCGACA GATAGTGAGT CTCGCTCT GCTGCCCAGG	0200	
ATTICO GA ACTOGACA GATAGTGAGT TITAACTTTA ACTOGACA	0250	
AAAGAATTAG GAACGGG GTCTCGCTCT GCTGCCCAGG	0300	
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CTGGAGTGCA GIGGCAGGAI CAGGAGCTAGGG ACTATAGGCA	0350	
CTCA AGCAGT TUTCUTCH CAGGGTCT	0400	
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CTTTGACACG GGGTCTCATT CTGTACGGGGAA CTG ATCCTCTCAC	0650	
ACCATGGCTC ACIGIAGICI IGACITATO CATCATCAC CACACCTGG	C 0700)
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ACCCCCAAA GIGCIGGGAI TACAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Y 103	0
AACAATTCTT ATGAAGCTAA AGTTGATTTG GATTAG ATGAGCTAT CTTATATAAT TAATTAGATT AAACAAGTCA CAAAAATTGG ATGAGCTAT CTTATATAAT TAATTAGATT AAACAAGTCATTCA ACAGAGAGTT GAAGGAGAGC	°C 110)()
CTEATATA AT TAATTAGATT AAACAAGTCA CAAAAATTG CAAGGAGAG	115	60
CTTATATAAT TAATTAGATT AAACAAGTUA CAAAAAT CAACAGTUA CAACAGTUA CAACAGAGTU GAAGGAGAGCUTTGGTGTGTT TTCTTTTACTT TTCTCTTTCA ACAGAGAGTT GAAGGAGAGT TAAAGATTT	A 120	
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CTGTTACAGC AGCCAACTCA CCATGTT TTGACTCCT	رن ن 15 ن	
GAGGAACTAA GGGTCATTT CCCCCCTTT GAAGG GTGTTAAT	CA 13:	
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ACTA AT CTATTATTTA AAAATTGTAA TAAGAGTGTT TATGGATGC	AT 15	00
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GAAGCATTTG TTAGTCCCTT GAAGCATCAT GGTAGGAGAA ATCACTGTT ATCATCTTTG TAAACCCACC TCTCTTTAGG GGCCAGAGAA ATCACTGTT ATCATCTTTG TAAACCCACCTCTCCAT GTCACCCTTG CCCCAAACC	T 10	
ATCATCTTTG TAAACCCACC ICICITIAGO CTCCCCAAACC	T 16	550
GTTACAACAA GCAAACCIII CCCICICIA AGCCCA GCTCTCT GAAGCCA	GTT 17	700
CACAAACATA TUUGAACATO GEREIXIIII	"I'(i 1/	750
CCTGGCTGGT TTTGCTGGCC AGGGAGAGGC AGGTGTGGTC AGTTCAGC TGGACATGTG GTGTGCAGGG AGAGAAGAGG GAAAAGAGCC ACTCAGC TGGACATGTG GTGTGCAGGA GACTCTTAGC ACTAGAACTT CTGTTTCT	CTC 18	800
CCIGGETOG CTCCTCC AGGG AGAGAAGAGG GAAAAGAGCC ACTCAGC	ra 19	250
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TCTGGCTGCC AGGGGATCCA GAZZACA CTTTTTATAA GCTGGTTT	CC 13	900
GAATTCTTCC CAAGGAAAAG ACAIDA GATTATTACCAA ATATTTTTA	G D	950
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TCATCACCTG GATTTACATG AATTTTTTAA GCATGAATAC ATATCACC ATTCAAAAGT ACATGAATG TACATTGAAG CCTTATATAC ATATCACC	m 2	150
ATTCAAAAGI ACAA GAT TETGTCCCAG TTGCTTCATT TTCCCTGT	11 2	
GATATAAAAA TIACCAAGAT TITOTA AMAGCATAGC TTATCATT	TC 2	200
CCTTCTTTGC IAAAGIATIT ABBUTTANCE AAAATATGGC CATTTTCT	1G 2	2250
ACCCCTATAT CCTTCAGTAA GTTTCACAGA GTCTCACAG	CI Z	2300
TATA A ACCAC AGTACCTCTG TTTTTTTTTTTTTTTT	TCT 2	2350
TATAAACCAC AGTACCTCTG TTTTTTTTT I I I GAGATACH GTCGCCCAGG CTGGAGTGCA ATGGCGTGAT CTTGGCTCAC TGCAACC		
GIUGUCAGO CIGOLOTO		

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GCCTCCCAGG TTCAGGCGAT TCTCCTGCCT CAGCCCCCCG GGTAGCTGGG 2400 ATTACAGGTG TGCGCCACCA TGCCCAGCTA ATTTTTTTT GTATCTTCAG 2450 TAGAGATGGG GTTTCACCAT GTTGGCCAGG CTGGTCTCGA GCTCCTGACC 2500 TCGTGATCGC CCGCTTAGGC CTCCCAAAGT GCTGGGATTA TAGGCATAAG 2550 CCACAGCGCC CGGCCCACAG TACCATTTTT ATACCTAACA AAGTGATTCC 2600 TTGGTACACT TAATACCTAG GCAAAATCAA ATTGTCCTGA AGGTCATGAA 2650 TGTCCTTGGA CAGTAATCTG GTTCTAATCG AGGATCTATA TGAAGCCCAC 2700 CAATCGCATC TGGTTGTTGT GTCTCTTTAG TCTGTCAGTC TGGAGCAAGC 2750 TCCCCTCCCT TCCTCAGTTC CCCATGTTAT TTATTTATTG TAAAAACTGG 2800 2850 GTCAGTTGTG CTGTAGAATA TTCTGCTTTC TGGATTTGTT TGTTTCTTCC TGTGGTGTCA TTTAACTTGT TTTACTATAC CCTAAACGGA ACCCTTTTCC 2900 TCTGTTTTCA GCAGAAGTCT GAGAGGCTAA ACTTGATGGC TGTGTTAACA 2950 TATGTCACGT GTAGCACAGT GGAGAAAGCA GGATATGGCT CATAATGACA 3000 GTGGTGAAGA CCTGCGAATG AAGTTGCTAG TTATCACCTA CATTAGGGTT 3050 3100 TGACATAGGT CTATGTTATG GGTCGCTGCA TCTGCTGGAA CTCACAGACT 3150 TTACTATAGA GAATCAAAGA TCCCGTATCC GAAGTCTATG GAAATGCTCA TGGTGGTAAA TTCCAACAGA ATGAAACACC AAACTTGCTT AAAGTAACTC 3200 3250 ACGTTTCAAT TTGAAAGAGA TATTGTCAAA ATTGGAGGCC CCCAGGTTCC 3300 TGTCTGTTCC AAATCTTTGC ATGATGACAG TGGTTTCTCT GATGTGGTAA GCTTTGGCTT TCTTCTGTTT TCTTTCTAAA AGATCACTGG AGTAGAGAGG 3350 AGITAAACAG ACATGACCIT TGACCICTIG CATGACCICC ACAGATAGCA 3400 AACCGGGCCG ACACATGGTT GACGATGTCC TTTTCTACAA TGAAGTTAAT 3450 3500 GAAAGTTCTG AAAATAGTGA TTACTTTCTG ACATTGATAG GATTTAGGAA ACCTCTGGAT AAATAGCTTA AGCATGGCTG TTTATGTTTT TGCTATAGAC 3550 AAAAAGCAGC AGCATGTACA TTGTATTTGG ACACAAGCCT GCCTCGGTTA 3600 ATATATTGAA CTATTGGACC ACTAGGGTTA GTAGGGAGCG GTCTGTACAC 3650 TITCTGATTC AGCATTCAGA AACATTCTAG GTGGACTCTG TAGCTTTCAG 3700 TTTTGTAAAG TTATCAGAAA AACATCGGGA GGGTTTGGCC ATCATATGTG 3750 AGCTTTGTGT TTCAATGCCA GTTACTCAGG ATTAGTAAAT TAATGACTGT 3800 CCAGAGGACT TCAGGGTCAC CAAGCTGCTG CACCTGCCAT TGGCTGACTC 3850 3900 TCCCCGGCTA TCTGTGGCTG AGATGGTGCT GCTTAGGTCA CGCAGAGCAT 3950 GAGCTGCTGC TGAAAGGGCA CAGGAGATGG CCCTTGGGCT TCTCATCCCA GGATGCCTGC CCTGCCCACC AATCCATGAG AAGATATGTA TGATTTCAGT 4000 AGGCCCTGGA TCAGCTTGTC ACCTCTGGTT TCCTGTTTGC TTTCCACTCA 4050 CTCAGCTGGA GTTTCATTTC CAGACTAAAG TCTTCATCAT TGGCTTCAGA 4100 AACAGCATTC ATCTGTGGCT GTGCTGATGT AGTACACCAA GAACAACTGG 4150 GCTCTTCTCT GTCACTTTCA GTGGGCTACC TCCCCTCACC TCTCCAAGCA 4200 4250 GCATGAAAGA ATTCTTTACA TTTTTAATCT CTTTTTTGTT TTTCCCTGAA AGTATGCTTT GGTGCTTAAA GAGAGAAGTC ACAAAAGTAT ACTACTGAGT 4300 TTCCTGGAGA TGAAATCCTG TTGTCCCTAG CTATGTGAAT GAGCACAGGG 4350 ATCCCTGATG CCATTATTIT GTATATTCAT ACGGCACACA CITACTGAGG 4400 GCCTTCTGTG TGCCCTAGGG GATTGAGCAC AGTGACATAT CAGGGCAGGT AGAAACAGAT GGAGAGCTGA TGCGGGCTGT CTTAGAGCAG CTGCCCCAGG 4500 AGGCCCCTGT GGATGGATGT TGGGCAGGAG CCCTGAGACG TTAGGGGCAT 4550 ATAACTAAAG GACATAGCAG GAGTTATAGG AGGAGCTGAT CCCTGAGGGA 4600 AACAATGAAG ACGGAGAAGA TGGGGCTAAA GTTTGAATTG TGGGGACATT 4650 AATCACAGTG ATTCTTAAAA CTTTGCTGTT GATGATTTTA AATGGAGAAA ATGAGTACGT AAGATGTTAT TTCCCAGTTC AGTATATTGG TTGCCCACAA 4750 4800 AGTATTTTCC TACCATGAAT GGTCATATAT ACTTGTTGTA GAATACCAGG GACAGCAGAG ATGGTGGGGT AGTTACTTCC TTTTCTTACA GCCCAAGAAC 4850 4900 TTTGGTGTCC AGGAGATTGA CCAATTTAGC CACTGAGCAT TTAATACAAC ACAGGGCTAC CCAGATCCCA CTGTCCTGAT TTGCCCTGAA AGCCAAAGGA 4950 GTTAGGAGAA GGTGAGTGGG GAGAATATAT TAATCCTGAG AGTTGAACAG 5000 AGCAAAAATC CCTATTACTT TTGTACTTAA AACATCTCTG CCACATGTGC 5100 TCACTCTTTA TATTCTGTTT AGGTGGTTTA TATGTGCACA TCCCATCCTA TGCCTGCAGT TAGCCAACTC AGGGTTTATA TTGCCTCCTT TCTTTTTTTC 5150 5200 TITTITITI TITTITAAG AGATGGGGTC TCATTCTATC ATGCAGACTG GAGTGCAGTG GTGTGATCAC AGCTCATTGT AACCTCCAAC GCCTGGACTA 5250 5300 AAGTGATCCT CCTACCTTGG CCTCTCTGGT AGCTGGGACT ACAGGTGCAT GCCACCACAC CCACCTAATT TTTTTTATTT TTATTTTTTG TAGAGACAGT 5350 5400 CTCACTATCT TGCTCAGGCT AGTCCTGAAC TCCTGGGCTC AAGTTATCIT

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GGAGATGAG THUGUETT CACTCCTGGG TTCAAGTGATTLICAGGCTGCTAGCTGCACCA TGCGCGGCTA SC CAGCCTCCTG AGTAGCTGAG ATTACAGGCA ACTGCCACCA TGCGCGCACA ATTATGTAT TTTTTTTTTTTTAG TAAGAGATGG GGTTTCACCA TGTTGGCCTCCA ACTAGTCTTA AACTCCTGAC CTCAAGCGAC CTGCCTGCTCG CTGATTTTTA AAGTGCTGGG ATTACAGGCA TGAGCCGCTA TGCCTCAGGTT AAGTCCTGATTTTTTTTTTTTTTTTAG GATGGGGTC TCACTATGTT GCTCAGGCTG TGCCTCAGGTT TTTTTTTTTTTTTTTTT	50 500 550 700 750 800 850
GCTGGGATTA TARGIGIONA TECTNAGTIC AAACCCATCA CAATCH THE TGCTTCTGT GTTTCTTTT GTTCTTAGTC AGGCCTGGATGT GCTCTGTTT TGTTCCTTCC AGGTGTTTCC CAGGGTGTTTC CAGGTGTTTCTCTTAGAGCC CAGAGAACTT GCTTTTCCC CTTATATATG ACCCTTAATTAGCC CAGTAACTTCTTTTCTAACAC ACTTATTAGA GGCCTGTTTTTCTAACAC ACTTATTAGTG GGCCTGTTTTTTCTAACAC CAGTATTAGTGTGT GTTCTTTTTTC TAGGAGGT GAATGGAGGCCCAGAGCCTTCATGATTGCTG GGTGCCCATA GCCTTTTTTGC TGAATGGAGGCCAGAGCCTC ATGATTGCTG GAAGCGAAGACCTC ATGATTGCTAGAAGAGTCATTCTTTTGTGTAGTAGCAAGAGAGAG	950 5000 5050 5100 6150 6200 6250 6350 6358
SEQ ID NO: 6 (hCatSper4 5' UTR Sequence) AGACGCTAAG GAAAATCCCT AAGCAGAGAT TTTCTGTTGG ATGCTAAAAG CAAGGAATAA AAGTTGAAAA TTTGGAAA	0050 0078
SEQ ID NO: 7 (hCatSper4 3' UTR Sequence) CTGGGCATGG GGCACCCATG TGCCGAGAGC CTTGCAGACC ATGACAGGTC CCTATTAAAC ACAGGCTTTC TG	0050 0072